III. CLAIM AMENDMENTS

1. A method for encoding video information, comprising the following steps of:

- estimating the motion of picture elements between a piece of reference video information and a piece of current video information,
- modeling the motion of picture elements using a certain set of basis functions and certain motion coefficients,
- defining a certain set of quantizers,
- selecting, based on a certain predetermined selection criterion, a motion coefficient quantizer from the set of quantizers, and
- quantizing the motion coefficients using the selected motion coefficient quantizer.

2. A method for encoding video information according to claim 1, wherein the selection criterion is the value of a certain parameter used in the encoding.

3. A method for encoding video information according to claim 2, further comprising the following steps of:

- defining a set of inverse quantizers,
- determining a selected motion coefficient quantizer using which the motion coefficients are quantized,
- performing inverse quantization of the quantized motion coefficients using an inverse quantizer corresponding to the selected motion coefficient quantizer,
- determining the motion of the picture elements using the inverse quantized motion coefficients and the basis functions,

- determining a piece of prediction video information using the piece of reference video information and the determined motion of the picture elements,

- determining a piece of prediction error video information based on the difference of the piece of prediction video information and the piece of current video information,

- coding the piece of prediction error video information and representing it with certain prediction error coefficients,

- quantizing the prediction error coefficients using a prediction error quantizer, and

- selecting the motion coefficient quantizer based on the prediction error quantizer.

4. A method for encoding video information according to claim 3, wherein the quantization interval of the motion coefficient quantizer is related to the quantization interval of the prediction error quantizer.

5. A method for encoding video information according to claim 1, wherein the predetermined selection criterion is the target image quality.

6. A method for encoding video information according to claim 1, wherein the predetermined selection criterion is the amount of information needed to represent the quantized coefficients.

7. A method for encoding video information according to claim 1, wherein the motion of picture elements is modeled using a set of orthogonal basis functions.

8. A method for encoding video information according to claim 7, wherein the motion of picture elements is modeled using a set of affine orthogonal basis functions.

9. A method for encoding video information according to claim 7, wherein the motion of a picture element is represented by predicting the motion of the picture element based on the motion of certain neighboring picture elements and by determining a refinement motion for the picture element.

10. A method for encoding video information according to claim 9, wherein the refinement motion is modeled using a set of affine orthogonal basis functions.

11. A method for encoding video information according to claim 1, further comprising a step of transmitting the quantized motion coefficients to a receiver.

12. A method for encoding video information according to claim 11, further comprising a step of transmitting information specifying the selected motion coefficient quantizer to the receiver.

13. A method for encoding video information according to claim 1, wherein the set of quantizers comprises a number of uniform quantizers each having a different quantization interval.

14. A method for encoding video information according to claim 1, wherein the set of quantizers comprises a number of modified uniform quantizers, each having a different quantization interval.

15. A method for decoding encoded video information, comprising the following steps of:

- receiving quantized motion coefficients describing motion of picture elements,
- defining a set of inverse quantizers,
- determining a selected motion coefficient quantizer using which the motion coefficients are quantized,
- performing inverse quantization of the quantized motion coefficients using an inverse quantizer corresponding to the selected motion coefficient quantizer,
- determining the motion of the picture elements using the inverse quantized motion coefficients and certain basis functions, and
- determining a piece of prediction video information using a piece of reference video information and the determined motion of the picture elements.

16. A method for decoding encoded video information according to claim 15, further comprising a step of determining the basis functions using which the motion of the picture elements is modeled.

17. A method for decoding encoded video information according to claim 15, wherein the selected motion coefficient quantizer is determined from transmitted information relating to a certain parameter used in the encoding.

18. A method for decoding encoded video information according to claim 16, wherein the received encoded video information comprises quantized prediction error coefficients describing a piece of prediction error video information, further comprising the following steps of:

- determining a prediction error quantizer using which the prediction error coefficients are quantized,

- performing inverse quantization of the quantized prediction error coefficients using an inverse quantizer corresponding to said prediction error quantizer,

- determining a decoded piece of prediction error video information using the inverse quantized prediction error coefficients, and

- determining a decoded piece of current video information using the piece of prediction video information, wherein the selected inverse motion coefficient quantizer is determined based on the prediction error quantizer.

19. A method for decoding encoded video information according to claim 15, wherein the encoded video information comprises information indicating the selected motion coefficient quantizer.

20. A method for decoding encoded video information according to claim 15, further comprising a step of receiving signalling information indicating the selected motion coefficient quantizer.

21-32. (Cancelled)